

WHAT IS CLAIMED IS:

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1 1. A communication apparatus for transmitting packetized
2 information, said information comprising a plurality of packets, each of said packets
3 comprising data and a header, over a satellite link in a telecommunications system, said
4 system comprising a client, selected from a plurality of potential clients, a server, selected
5 from a plurality of potential servers, a first gateway, connected to said client by a first
6 telecommunications link, a second gateway, connected to said server by a second
7 telecommunications link, a third telecommunications link connecting said first gateway to
8 said second gateway, said apparatus comprising:

9 a network interface for linking said first gateway with said client;
10 a satellite gateway interface;
11 a system memory; and
12 a bus interconnecting said network interface, said satellite gateway
13 interface, and said system memory with a processor, said processor operatively disposed
14 to:
15 intercept a connection with said server, said communication initiated by
16 said client;
17 establish a connection between said first gateway and said second gateway
18 over said telecommunications link;
19 provide a bi-directional flow of information from said client to said server
20 and from said server to said client using said connection between said first gateway and
21 said second gateway, wherein said providing a bi-directional flow occurs transparently to
22 said client and said server.

1 2. The apparatus of claim 1 wherein said processor is further
2 operatively disposed to convert said information at said first gateway from a first protocol
3 into a second protocol for transmission over said telecommunications link; and
4 convert said second protocol into said first protocol at said second
5 gateway.

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1 3. The apparatus of claim 2 wherein the first protocol comprises TCP
2 and said second protocol comprises XTP.

1 4. The apparatus of claim 2 wherein said second protocol is more
2 suitable for transmission over a satellite link than using a TCP protocol.

1 5. The apparatus of claim 2 wherein said converting comprises
2 removing said header to leave said data substantially intact.

1 6. The apparatus of claim 2 wherein said converting comprises
2 removing said header to leave said data substantially intact and encapsulating said data
3 using a satellite protocol header.

1 7. The apparatus of claim 6 wherein said data is a portion of said flow
2 of information.

1 8. The apparatus of claim 1 wherein said processor is further
2 operatively disposed to receive said flow of information by a gateway over said
3 telecommunications link.

1 9. A communication apparatus comprising:
2 a TCP interface;
3 a satellite gateway interface;
4 a system memory;
5 a bus interconnecting said TCP interface, said satellite gateway interface
6 and said system memory with a processor, said processor operatively disposed to:
7 intercept a first communication connection between a client and a server;
8 form a second communication connection between a first satellite gateway
9 and a second satellite gateway that is over a satellite link;
10 transmit information describing said first connection to said second
11 satellite gateway; and
12 form a third communication connection between said second satellite
13 gateway and a destination server using said information describing said first connection
14 wherein said forming said second connection and forming said third connection occur
15 transparently to said client and said server.

1 10. The apparatus of claim 9 wherein said information comprises a
2 client address and a destination server address.

1 11. The apparatus of claim 9 wherein said processor is further
2 operatively disposed to transmit a response from said second satellite gateway to said first
3 satellite gateway when said third communication connection with said destination server
4 occurs.

1 12. The apparatus of claim 9 wherein said processor is further
2 operatively disposed to transmit a response from said first satellite gateway to said client
3 when said third communication connection with said destination server occurs.

1 13. The apparatus of claim 9 wherein said processor is further
2 operatively disposed to transmit a failure response from said first satellite gateway to said
3 client when said third communication connection is lost.

1 14. A apparatus for establishing a communication between a first
2 computer and one of a plurality of second computers, said apparatus comprising:
3 a network interface;
4 a satellite gateway interface;
5 a system memory;
6 a bus interconnecting said network interface, said satellite gateway
7 interface and said system memory with a processor, said processor operatively disposed
8 to:

9 provide a first protocol and a second protocol, wherein at least one of said
10 plurality of second computers is able to communicate with said first computer using said
11 first protocol and at least one of said plurality of second computers is able to
12 communicate with said first computer using said second protocol;

13 determine whether a connection can be established between said first
14 computer and at least one of said plurality of second computers using said first protocol;
15 if said connection cannot be established, then establish a connection
16 between said first computer and said at least one of said plurality of second computers
17 using said second protocol.

1 15. The apparatus of claim 14 wherein each of said plurality of second
2 computers is able to communicate with said first computer using said second protocol.

1 16. The apparatus of claim 14 wherein said first protocol is XTP.

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1 17. The apparatus of claim 14 wherein said second protocol is TCP/IP.

1 18. The apparatus of claim 14 wherein said first protocol has a first
2 throughput and said second protocol has a second throughput, said first throughput being
3 at least 7.5 times greater than said second throughput at a bit error rate of 1×10^{-7}

1 19. The apparatus of claim 14 wherein said first protocol has a first
2 throughput and said second protocol has a second throughput, said first throughput being
3 at least 10 times greater than said second throughput at a bit error rate of 1×10^{-6}

1 20. The apparatus of claim 14 wherein said first protocol has a
2 throughput of at least 95% of an available bandwidth at a bit error rate of 1×10^{-8} .

1 21. In a communications system for providing transport of packetized
2 information in a TCP protocol between a client and a server, a method of converting said
3 system to a system for providing transport of packetized information in a satellite
4 protocol, said method comprising:

5 installing a first gateway, said first gateway operatively disposed to
6 intercept connections from said client to said server; said first gateway further operatively
7 disposed to convert said packetized information from TCP protocol to satellite protocol;

8 installing a second gateway, said second gateway disposed to establish a
9 connection with said server, said second gateway further operatively disposed to convert
10 said packetized information from satellite protocol to TCP protocol, said first gateway
11 and said second gateway operatively disposed to establish a connection over a common
12 telecommunications link.

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